

國立台灣科技大學 114學年 第2學期 課程大綱

Spring 2026 NTUST Course Outline

授課教師：林柏廷

Instructor:Po Ting Lin

課程名稱：最佳設計

Course Title : Optimal Design

2026/5/5

課程代號： ME5209701 Course Code 學分數： 3 Credits	必選修：選修/半學年 Required/Elective:Elective/Half Yr. 先修課程： Prerequisites
節次教室： M2(華夏恆毅樓D403) M3(華夏恆毅樓D403) M4(華夏恆毅樓D403) Time/Location	
專業核心能力： Core Professional Competencies	
課程網址： Course Website https://ntustmedal.wordpress.com/teaching/	
課程宗旨： Course Objectives 本課程介紹數值設計最佳化之原理與用處，重點擺在與工程設計有關之最佳化理論與問題合成之方法。授課內容包含應用在無限制條件之非線性問題，有限制條件之線性與非線性問題，敏感度分析，多目標最佳化，及整數／離散數最佳化等之各種方法。 This course introduces the theories and applications of numerical optimization techniques. Emphasis will be placed on the formulation of the design optimization problem and the proper selection of the optimization method. These optimization methods include unconstrained and constrained design problems, sensitive analysis, multicriterion optimization, interger/discrete optimization, etc.	
課程大綱： Outline of Lectures 本課程介紹數值設計最佳化之原理與用處，重點擺在與工程設計有關之最佳化理論與問題合成之方法。授課內容包含應用在無限制條件之非線性問題，有限制條件之線性與非線性問題，敏感度分析，多目標最佳化，及整數／離散數最佳化等之各種方法。 This course introduces the theories and applications of numerical optimization techniques. Emphasis will be placed on the formulation of the design optimization problem and the proper selection of the optimization method. These optimization methods include unconstrained and constrained design problems, sensitive analysis, multicriterion optimization, interger/discrete optimization, etc.	
授課方式： Method of Instruction 講授 Lecture：80% 分組討論 Group discussion：10% 案例研討 Case study：0% 操做練習 Practical exercises：10% 講授 Lecture：%	
教科書： Textbooks 無 None	
參考書目： References 無 None	
修課須知： Notice	

助教是 Tejal Shirsat。如果你想查看之前的課程，可以參考「<https://ntustmedal.wordpress.com/teaching/>」中最佳設計的部分。The TA is Tejal Shirsat. If you want to take a look at previous semester's lecture, you can refer to "<https://ntustmedal.wordpress.com/teaching/>" in the Optimal Design section.

評量方式：
Grading

考試 1: 25%
考試 2: 25%
提案報告: 10%
進度報告: 10%
期末報告: 20%
出席: 10%

Exam 1: 25%
Exam 2: 25%
Proposal: 10%
Progress report: 10%
Final: 20%
Attendance: 10%

備註說明：
Notes

參加本課程的學生需要具備基本的數學和程式設計知識。 Students taking this course need to have basic understanding of Mathematics and Programming.